

B2 8. (Amended) A vector according to claim 1, wherein said heterologous DNA has at least 80% sequence similarity to a fragment of said endogenous plant gene C

9. (Twice Amended) A vector according to claim 1, wherein said heterologous DNA has at least 80% sequence similarity to the entire coding region of endogenous plant gene.

C3 B3 12. (Twice Amended) A DNA construct comprising a geminivirus genome, wherein the DNA encoding the geminivirus coat protein has been replaced in part or in total with heterologous DNA having at least 80% sequence similarity to an endogenous plant gene that occurs naturally in the plant genome.

B4 18. (Twice Amended) A DNA construct according to claim 12, wherein said heterologous DNA has at least 80% sequence similarity to a fragment of said endogenous plant gene. C

19. (Twice Amended) A DNA construct according to claim 12, wherein said heterologous DNA has at least 80% sequence similarity to the entire coding region of said endogenous plant gene.

B5 36. (Amended) A geminivirus silencing vector comprising a geminivirus genome which contains heterologous DNA, said heterologous DNA having at least 80% sequence similarity to a fragment of a gene endogenous to a plant, wherein the heterologous DNA sequence is inserted into the silencing vector in the sense orientation, and wherein said geminivirus silencing vector silences expression of the endogenous plant gene upon introduction into a plant cell. C

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38. (Amended) A geminivirus silencing vector comprising a geminivirus genome which contains a heterologous DNA, said heterologous DNA having at least 80% sequence similarity to a coding region of a gene endogenous to a plant, wherein the heterologous DNA sequence is inserted into the silencing vector in the antisense orientation, and wherein said geminivirus silencing vector silences expression of the endogenous plant gene upon introduction into a plant cell.

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40. (Amended) A DNA construct comprising a geminivirus genome, wherein the DNA encoding the geminivirus coat protein has been replaced in part or in total with heterologous DNA having at least 80% sequence similarity to a coding region of a gene endogenous to a plant, and wherein the heterologous DNA sequence is inserted into the geminivirus genome in the antisense orientation.

B8  
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42. (Amended) A geminivirus silencing vector comprising a Tomato Golden Mosaic Virus (TGMV) genome which contains heterologous DNA, said heterologous DNA having at least 80% sequence similarity to a gene endogenous to a plant, wherein said geminivirus silencing vector silences expression of the endogenous plant gene upon introduction into a plant cell.

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44. (Amended) A geminivirus silencing vector comprising an African Cassava Mosaic Virus (ACMV) genome which contains heterologous DNA, said heterologous DNA having at least 80% sequence similarity to a gene endogenous to a plant, and wherein said geminivirus silencing vector silences expression of the endogenous plant gene upon introduction into a plant cell.

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46. (Amended) A DNA construct comprising a Tomato Golden Mosaic Virus (TGMV) genome, wherein the DNA encoding the TGMV coat

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protein has been replaced in part or in total with heterologous DNA having at least 80% sequence similarity to an endogenous plant gene.

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48. (Amended) A DNA construct comprising an African Cassava Mosaic Virus (ACMV) genome, wherein the DNA encoding the ACMV coat protein has been replaced in part or in total with heterologous DNA having at least 80% sequence similarity to an endogenous plant gene.

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50. (Amended) A method of silencing the expression of an endogenous plant gene in a plant cell, comprising inoculating said plant cell with a geminivirus silencing vector comprising a geminivirus genome which contains heterologous DNA, said heterologous DNA having at least 80% sequence similarity to a gene endogenous to a plant.

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52. (Amended) A method of silencing the expression of an endogenous plant gene in a plant cell, comprising inoculating said plant cell with a DNA construct comprising a geminivirus genome, wherein the DNA encoding the geminivirus coat protein has been replaced in part or in total with heterologous DNA having at least 80% sequence similarity to an endogenous plant gene.

C12  
B14  
54. (Amended) A method of systemically silencing expression of an endogenous plant gene in a plant, comprising inoculating said plant with a geminivirus silencing vector comprising a geminivirus genome which contains heterologous DNA, said heterologous DNA having at least 80% sequence similarity to a gene endogenous to a plant.

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56. (Amended) A method of systemically silencing expression of an endogenous plant gene in a plant, comprising inoculating said plant with a DNA construct comprising a geminivirus genome, wherein the DNA encoding the geminivirus coat protein has been replaced in part or in total with

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heterologous DNA having at least 80% sequence similarity to an endogenous plant gene

Please add the following new claims:

Sub 14  
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62. (New) A geminivirus silencing vector comprising a Tomato Golden Mosaic Virus (TGMV) genome comprising:  
the TGMV AL1, AL2 and AL3 coding sequences operably associated with an AL1 promoter,  
heterologous DNA, said heterologous DNA operably associated with a TGMV coat protein promoter and having at least 80% sequence similarity to a gene endogenous to a plant that occurs naturally in the plant genome,  
wherein said heterologous DNA and said AL1, AL2 and AL3 coding sequences are bidirectionally transcribed from said geminivirus silencing vector, and  
wherein said geminivirus silencing vector silences expression of the endogenous plant gene upon introduction into a plant cell.

63. (New) A method of silencing the expression of an endogenous plant gene in a plant cell, comprising inoculating said plant cell with a geminivirus silencing vector according to Claim 42.

Sub 15  
64. (New) A method of silencing the expression of an endogenous plant gene in a plant cell, comprising:  
providing a nucleic acid sequence encoding the geminivirus movement proteins to said plant cell;  
inoculating said plant cell with a geminivirus silencing vector comprising a geminivirus genome which contains heterologous DNA having at least 80% sequence similarity to a gene endogenous to a plant.

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Filed: March 30, 1999  
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B16  
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65. (New) The method of Claim 64, wherein said plant cell is a cell from a species of *Nicotiana* and said geminivirus silencing vector is a Tomato Golden Mosaic Virus (TGMV) silencing vector.

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